

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



10/539678



(43) International Publication Date  
8 July 2004 (08.07.2004)

PCT

(10) International Publication Number  
WO 2004/057411 A2

- (51) International Patent Classification?: G02F
- (21) International Application Number:  
PCT/KR2003/002755
- (22) International Filing Date:  
17 December 2003 (17.12.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
10-2002-0082048 21 December 2002 (21.12.2002) KR  
10-2002-0082049 21 December 2002 (21.12.2002) KR  
10-2003-0018508 25 March 2003 (25.03.2003) KR
- (71) Applicant (for all designated States except US): SAM-SUNG ELECTRONICS CO., LTD. [KR/KR]; 416, Maetan-dong, Yeongtong-gu, Suwon-si, 442-742 Gyeonggi-do (KR).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): KIM, Hee-Seop [KR/KR]; 110-304 Sinyeongtong Hyundai Apt.,

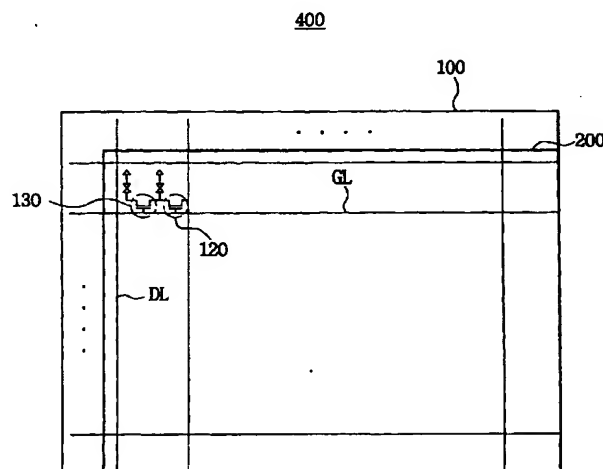
#865-1 Banwol-ri, Taean-eup, Hwaseong-gun, 445-973 Gyeonggi-do (KR). PARK, Won-Sang [KR/KR]; 302-2001 Suwondongmaeul Ssangyong Apt., Sangha-ri, Guseong-myeon, Yongin-si, 449-914 Gyeonggi-do (KR). KIM, Sang-II [KR/KR]; 225-1601 Hwanggol-maeul Byeoksan Apt., Yeongtong-dong, Paldal-gu, Suwon-si, 442-744 Gyeonggi-do (KR). SAKONG, Dong-Sik [KR/KR]; 133-1101 Model Samsung Apt., Seohyeon-dong, Bundang-gu, Seongnam-si, 463-050 Gyeonggi-do (KR). YANG, Young-Chol [KR/KR]; 220-1201, 2 Danji Jugong Apt., Geumjeong-dong, Gunpo-si, 435-050 Gyeonggi-do (KR). HONG, Sung-Kyu [KR/KR]; 513-403 Donga villa, #512 Yatap-dong, Bundang-gu, Seongnam-si, 463-070 Gyeonggi-do (KR). KIM, Jong-Lae [KR/KR]; 401 Hyundaiparkvill, #44-7 Munjeong-dong, Songpa-gu, 138-200 Seoul (KR).

(74) Agent: PARK, Young-Woo; 5F, Seil Building, #727-13, Yoksam-dong, Gangnam-gu, 135-921 Seoul (KR).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG,

[Continued on next page]

(54) Title: ARRAY SUBSTRATE, LIQUID CRYSTAL DISPLAY APPARATUS HAVING THE SAME AND METHOD FOR DRIVING LIQUID CRYSTAL DISPLAY APPARATUS



(57) Abstract: An array substrate includes a gate line, a data line, a switching device, a transmissive electrode, a reflective electrode and a compensating wiring. A pixel region includes first and second regions. The switching device is connected to the gate line and the data line. The transmissive electrode is connected to the switching device. The transmissive electrode is formed in the first region. The reflective electrode is insulated from the transmissive electrode. The reflective electrode is formed in the second region that is adjacent to the first region. The compensating wiring is connected to the switching device. The compensating wiring faces the reflective electrode in the second region with an insulation layer interposed therebetween. Thus, both of a reflectivity of the reflective electrode and a transmissivity of the transmissive electrode are enhanced simultaneously, while the liquid crystal display apparatus maintains a uniform cell gap.